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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,156	03/01/2005	Tsuyoshi Tanikawa	050087	6660

23850 7590 10/03/2006

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EXAMINER	
ROST, ANDREW J	

ART UNIT	PAPER NUMBER
3751	

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/526,156	TANIKAWA ET AL.	
	Examiner	Art Unit	
	Andrew J. Rost	3751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the Amendment filed on 6/30/2006. Claim 1 has been amended. No claims have been canceled. No claims have been added. Presently, claims 1-6 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugano et al. (JP 08-075017).

Regarding claim 1, Sugano et al. disclose a diaphragm valve having a fluid flow channel (1a, 1b), a valve element holder (10) that operates a valve element (15) in a valve case (1), a lower casing (2) attached to the valve case and an upper casing (5) attached to the lower casing. Sugano et al. disclose a valve stem (3) connected with a piston (7) in the space provided between upper and lower casings. Sugano et al. further disclose an admitting passageway (6) that supplies fluid to either an upper space (space between piston and upper casing) or a lower space (space between piston and lower casing) and a spring being in the space opposite the space provided with fluid (as shown in drawing 1). Sugano et al. disclose placing a spring in the upper space to bias the piston and valve to a closed position with a passageway through the piston (right

side of Fig. 1). Sugano et al. disclose placing a spring in the lower space to bias the piston and valve to an opened position (left side of Fig. 1). Sugano et al. further show the use of a valve case, valve element, valve element holder, lower casing, upper casing, valve stem and piston are used in both the normally opened and normally closed valve orientations and are therefore common components.

In regards to claim 2, Sugano et al. disclose the piston and valve stem are integral in construction (as shown in drawing 1).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugano et al. in view of Wells et al. (US 3,958,592).

Sugano et al. disclose the fluid control device having an annular recess on the top wall lower surface of the upper casing (as shown on right side of drawing 1). Sugano et al. does not disclose an annular recess on the bottom wall upper surface of the lower casing. However, Wells et al. teach a raised portion on the bottom wall upper surface of a lower casing in a pressure operated valve that is spring biased open (as shown in figure 1) with the raised portion defining an annular recess that receives a spring in order to prevent the spring from moving out of axial alignment from the valve stem. Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify the bottom wall upper surface of the lower casing of Sugano et al. by adding the raised portion to define an annular recess as taught by Wells et al. in order to prevent a biasing spring from becoming misaligned.

6. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugano et al. in view of Wells et al. as applied to claim 3 above, and further in view of Ohmi et al. (US 4,828,219).

In regards to claim 4, the modified Sugano et al. reference discloses the fluid control valve with an inlet in the top wall of the upper casing having an upward connection opening aligned with a downward passage to the upper space (as shown in drawing 1). The modified Sugano et al. reference discloses an air supply port (6) but does not disclose if the port is threaded. However, Ohmi et al. teach the use of a threaded pneumatic port (58) for the purpose of introducing air into a diaphragm valve operator that has a spring bias. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to thread the air supply port of the modified Sugano et al. reference as taught by Ohmi et al. in order to secure an air supply to the upper casing of the diaphragm operator.

In regards to claim 5, the modified Sugano et al. reference discloses the fluid control valve is normal biased open with the spring in the lower space.

In regards to claim 6, the modified Sugano et al. reference discloses the fluid control valve is normal biased closed with the spring in the upper space and the spring in the annular recess in the upper casing and in an annular recess on the top surface of the piston and the piston having a small-diameter portion that fits in a downward

passage that communicates to the air supply port with the piston having an air passage that allows air to be transmitted to the lower space (as shown in Sugano et al. drawing 1, right side).

Response to Arguments

7. Applicants' arguments filed 6/30/2006 have been fully considered but they are not persuasive.

Applicant's arguments on page 8, first full paragraph are not persuasive. The Applicants state that the instant invention has a valve case, valve element, valve element holder, lower casing, upper casing, valve stem and piston as common components for the normally opened and normally closed fluid control devices. It can be seen in figure 1 of the Sugano et al. reference that both the normally opened valve (left side of Fig. 1) and the normally closed valve (right side of Fig. 1) both use a valve case, valve element, valve element holder, lower casing, upper casing, valve stem and piston, therefore the components are common to both operating states of the valve. Therefore, Applicants' arguments are not persuasive.

Applicants' arguments on page 9, second full paragraph are not persuasive. The Applicants argue that the "raised portion" of the Wells valve arrangement would not lead to a recess. However, Wells et al. teach the placement of a raised portion on the bottom wall upper surface of the lower casing and this raised portion defines a recess with the recess being defined between the raised portion and the side wall of the lower casing. This recess receives a spring that biases a valve piston to a position near the top wall lower surface of an upper casing. The spring is supported on the inside surface

by the raised portion to prevent the spring from sliding along the bottom wall upper surface of the lower casing. Therefore, Applicants' arguments are not persuasive.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Laun (3,122,065) discloses a reversible actuator having an actuator housing defining a chamber and reversing an orientation of a piston assembly to change the bias direction of a valve.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew J. Rost whose telephone number is 571-272-2711. The examiner can normally be reached on 7:00 - 4:30 M-Th and 7:00 - 12:00 Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu can be reached on 571-272-4835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrew J Rost
Examiner
Art Unit 3751

JUSTINE R. YU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700

9/28/06